JLOTS SUPPORT

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Amphibious and Expeditionary Department

NFESC Mission

- **Provide specialized facilities engineering and technical products and services**
  - **Unique**
  - **Navy-wide applicability**
  - **Best done at one location**
- **Be a leverage agent for transitioning new technology in the most cost effective manner**
- **Consolidate, analyze, and report Navywide installation information**

A Re-engineered Organization

NCEL

NEESA

FPO-1 (Ocean Const)

FPO-2 (Electronics)

Chief Engineer's Office

BRAC

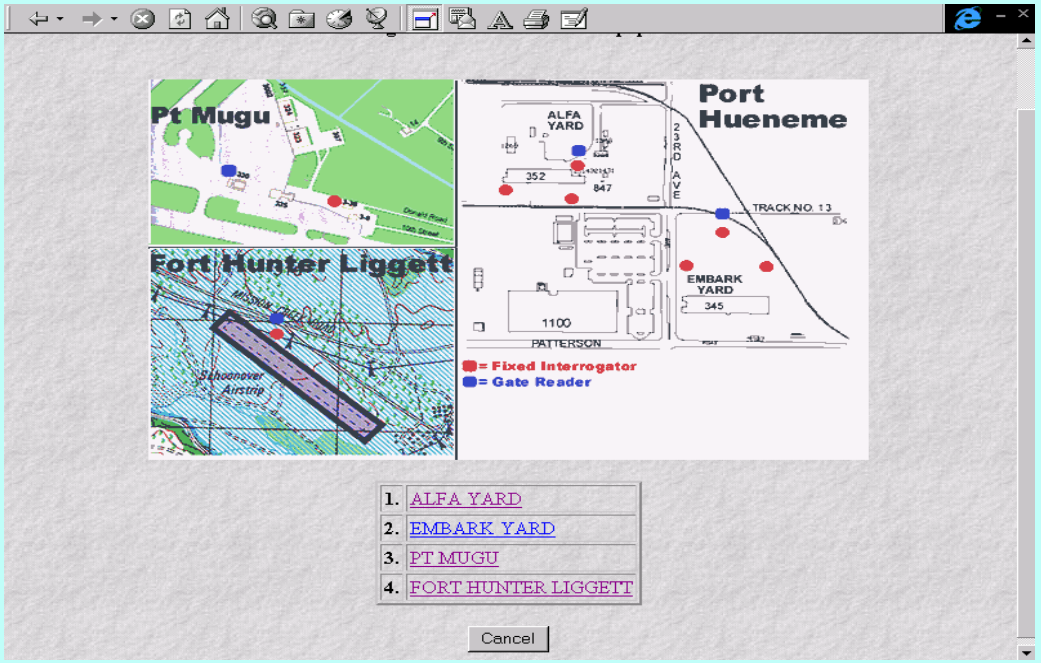
NFESC Technical Departments

- Amphibious and Expeditionary
- Ocean Facilities Engineering
- Energy and Utilities
- Environmental
- Shore Facilities

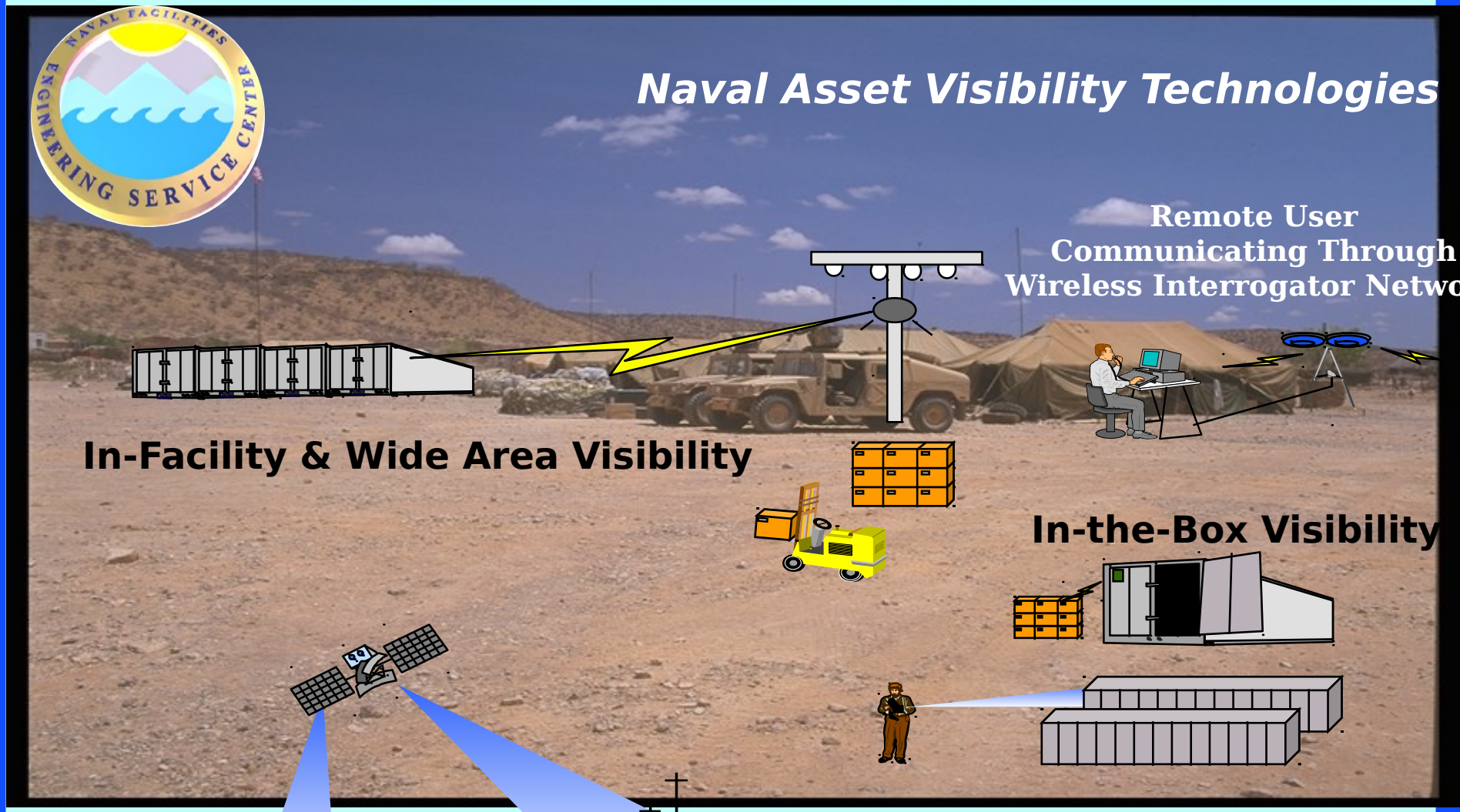
Amphibious and Expeditionary Department

- **Advanced Logistics Systems in Support of Amphibious Operations**
- **Expeditionary Systems and Engineering Support**

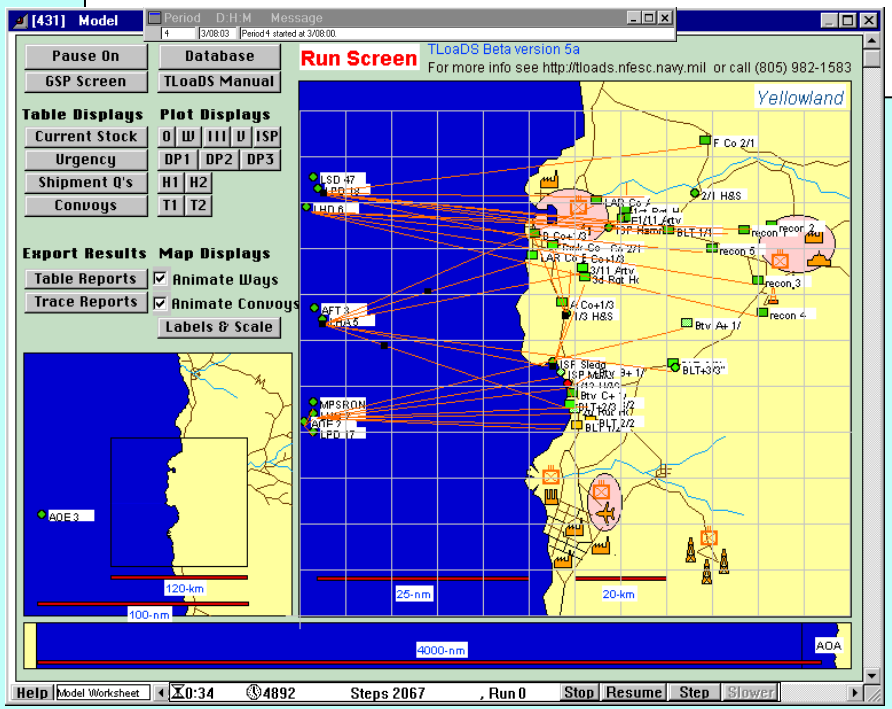
Naval Asset Visibility



Naval Asset Visibility Technologies



TLoaDS & CLoaDS



- **Features**
  - Stochastic discrete event
  - Queuing, chaotic dynamics
  - Very flexible, setup wizards
  - Animated, tabular & trace output
  - Integral database, fast run speed
  - Low cost PC COTS software

- **Force planning - analytical M&S**
  - Doctrine, concepts & TTP
  - Force structure & task organization
  - Impacts of training & education
  - Equipment design & quantities
  - ***HLA distributed simulation***
- **Operation planning - Log C2 InfoSys**
  - Tactical & operational planning
  - Conceptual & functional planning
  - Orientation, contingency & ***commitment*** planning
  - Deliberate & ***rapid*** planning
  - ***Collaborative planning***

Key: Current capabilities
Planned capabilities

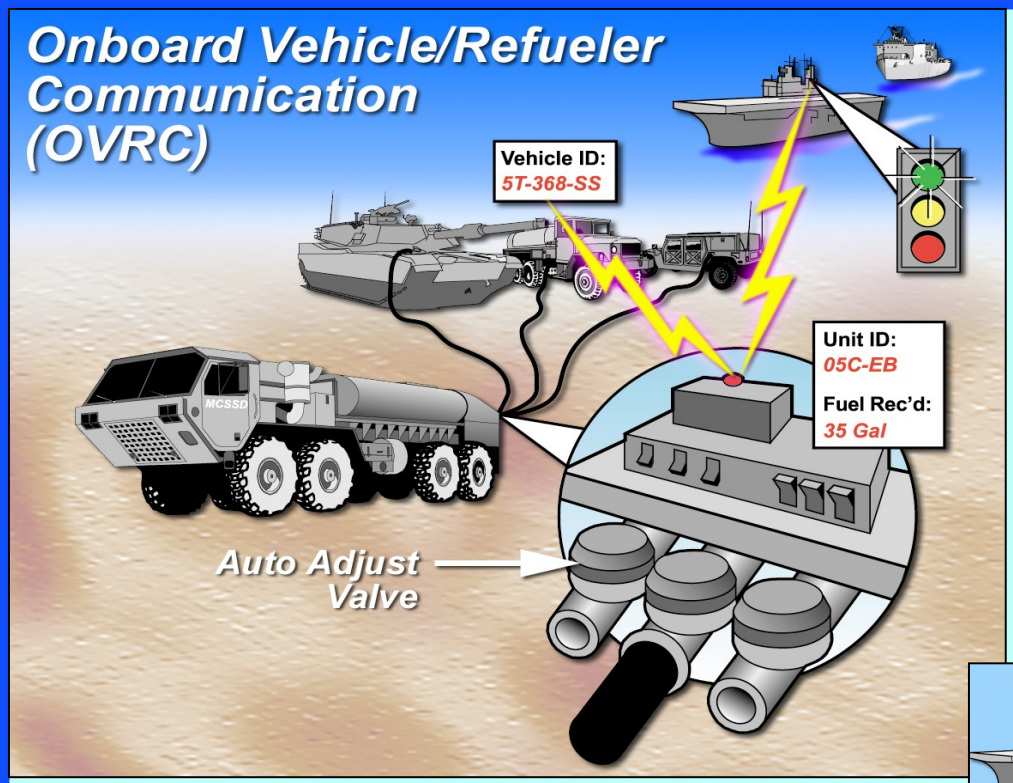
Small Unit Logistics (SUL)

Objective:

- **Improve tactical/small unit logistics C2**
- **Improve CSS effectiveness through course of action and execution tools**

- **WEB-BASED/ INTERNET/ DATA INTERFACE TO LEGACY INFO SYS**
- **DATA WAREHOUSING / MART / MINING**
- **MEDIATION/NEURAL NETWORKS TECHNOLOGY TO DECISION SUPPORT TOOLS**
- **UTILIZE COMMON TACTICAL PICTURE**

USMC 6.3 Fuel Initiatives

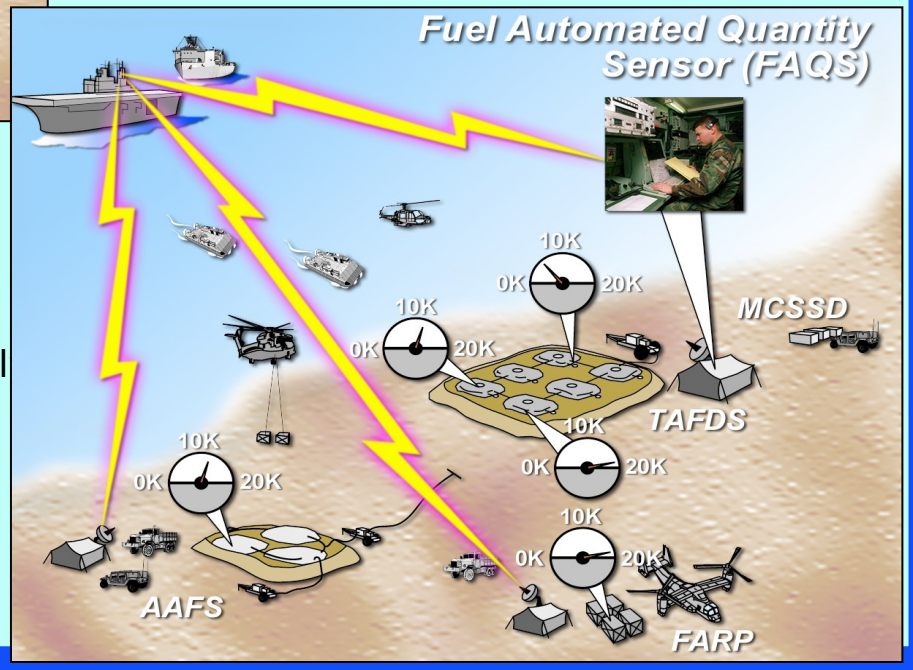


OVRC

- Purpose
  - Collect/ transmit vehicle diagnostics sensor(s) output
- Status
  - Contract awarded
  - TAV compatible tags and data links
  - Demo planned Q3FY00 (DMFD)

FAQS

- Purpose
  - Provide local (e.g., tank farm) and global (battlefield) picture of fuel suppl
- Status
  - Contract awarded
  - Linked to TAV and SUL
  - Demo planned Q3FY00 (provide SUL real input)



JLOTS Technology Improvements

Advanced Pile Technology_

Objective:

Develop a rapid innovative pile
splicing technology to reduce ELCAS(M) installation time

Payoff:

Reduce pile splicing from 3 hours to <40 mins

Improve operational safety

Use existing generators

Joint Modular Lighter System

Next generation causeway system
- **Sea State 3 capable**
- **Service interoperable**

R&D establishing feasibility completed
- **Modular concept**
- **SS3 connections**

- Status
  - **Contractor Demo complete**
  - **Gov't Test and Evaluation in progress**

Joint Modular Lighter System

JMLS Ferry

JMLS Warping Tug

- **Overboard from MPF**
- **Assembly at sea**

D-Day Mobile Fuel Distributi

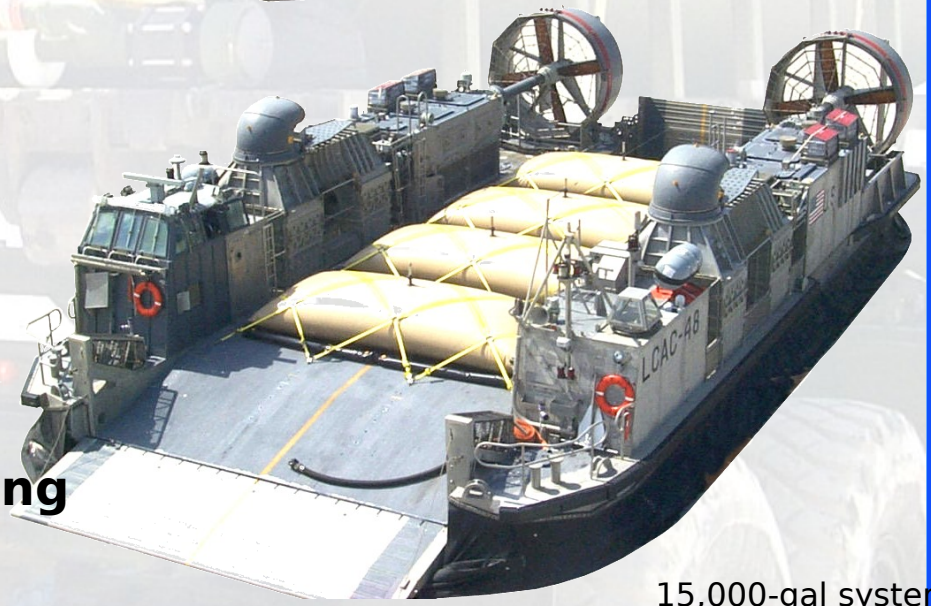
- Dynamic Testing of the DMFD 15,000 Gal. System Aboard an LCAC of ACU-5 off of Camp Pendleton, CA

- Lightweight tanks of the DMFD 3,000 gallon System undergoing offroad durability trials on the tactical vehicle training course at Ft. Devens, MA

D-Day Mobile Fuel Distribution System

- **Delivers fuel following an assault**
- **Supports emerging warfare concepts**
- **RDT&E of 3 concepts**
- **Major demonstrations completed**
  - **Concept demo, May 2000 at Camp Pendleton**
  - **System demo, Oct 2000 during Foal Eagle in Korea**

400-gal system



15,000-gal system

Amphibious Bulk Liquid Transfer System (ABLTS)

AABWS during Baltic Challenge '97, Estonia

970714-M-0023H-003

Prototype ABLTS demonstration, Coronado CA

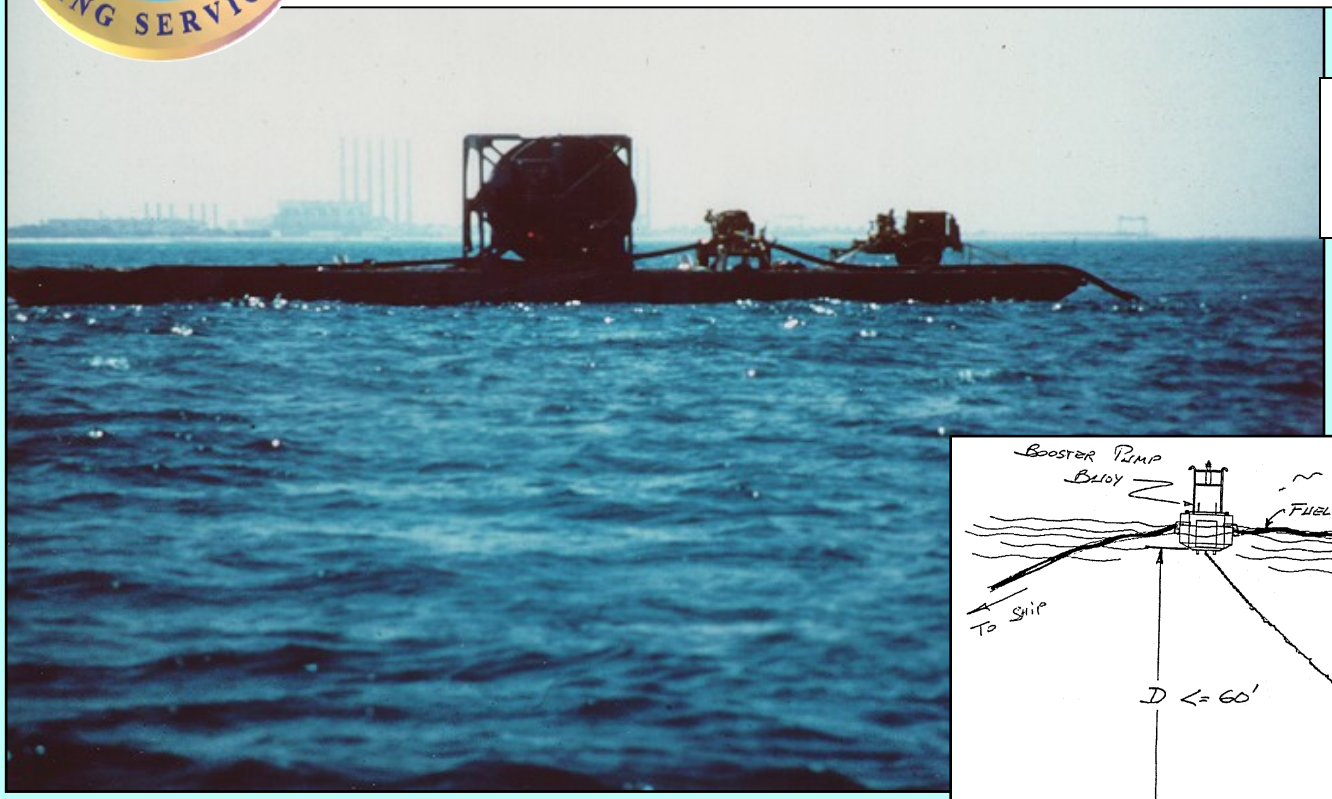
Capabilities

- 600 GPM, 10,000-ft Stand-Off
- 5,000-ft of 6-in fuel hose per reel
- 10,000-ft of 4-in water hose per reel

Improvements over AABFS/AABWS

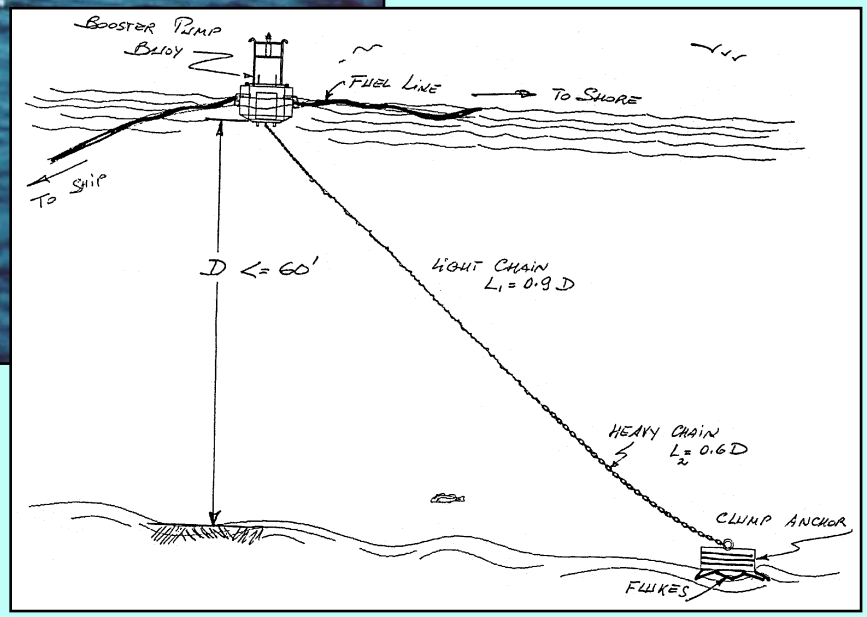
- 40% reduction in weight & volume
- Air and highway transportable
- Reduced life cycle cost
- Increased RM&A
- Improved operational safety

Autonomous Marine Booster Pump (AMBP)



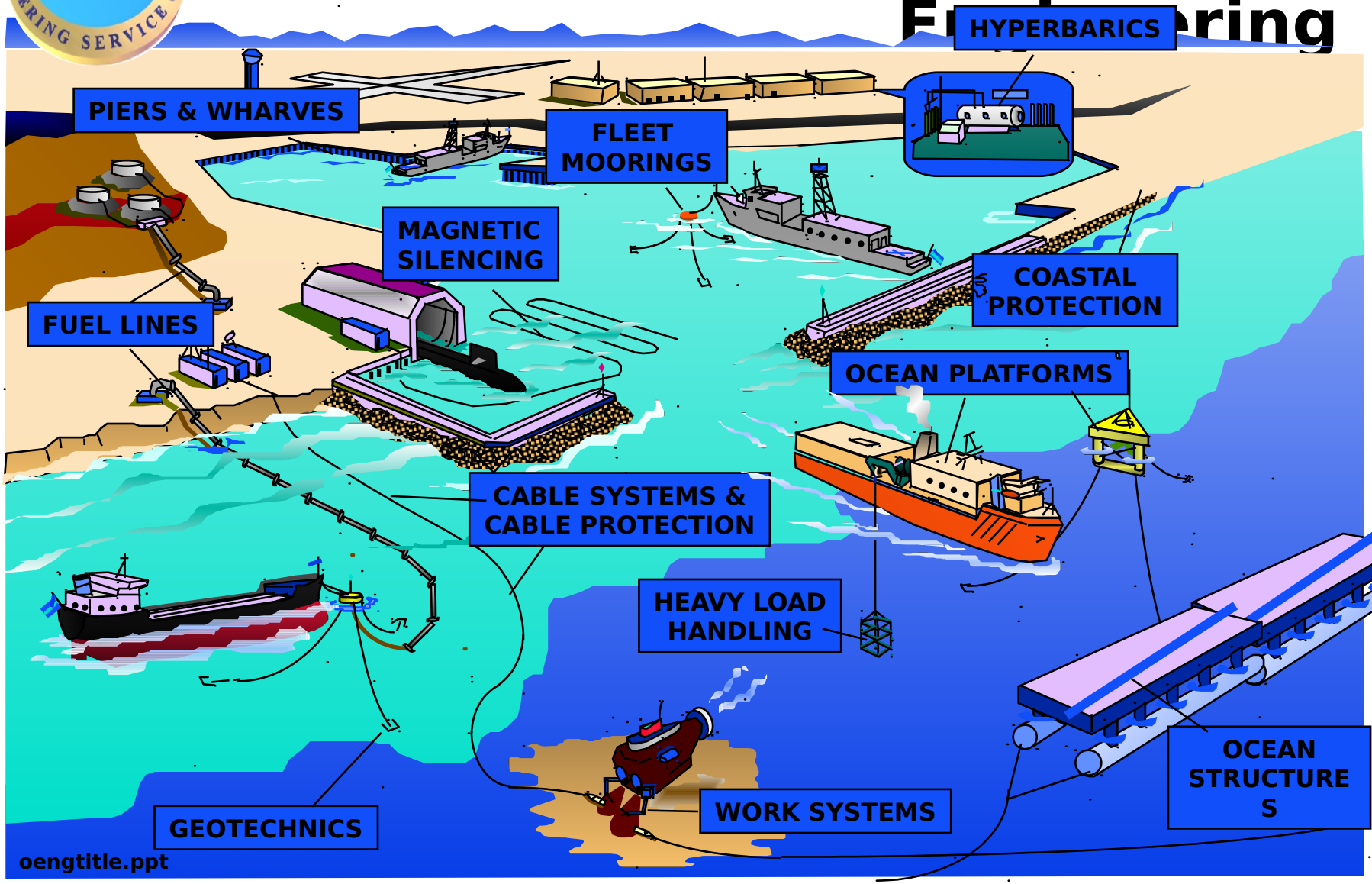
Seabee "Can Do" solution

Self-contained and -supporting, in-line pump



Increase Standoff Distances and/or Flowrates during Ship-to-Shore Bulk Liquid transfer Operations.

Ocean Facilities Engineering



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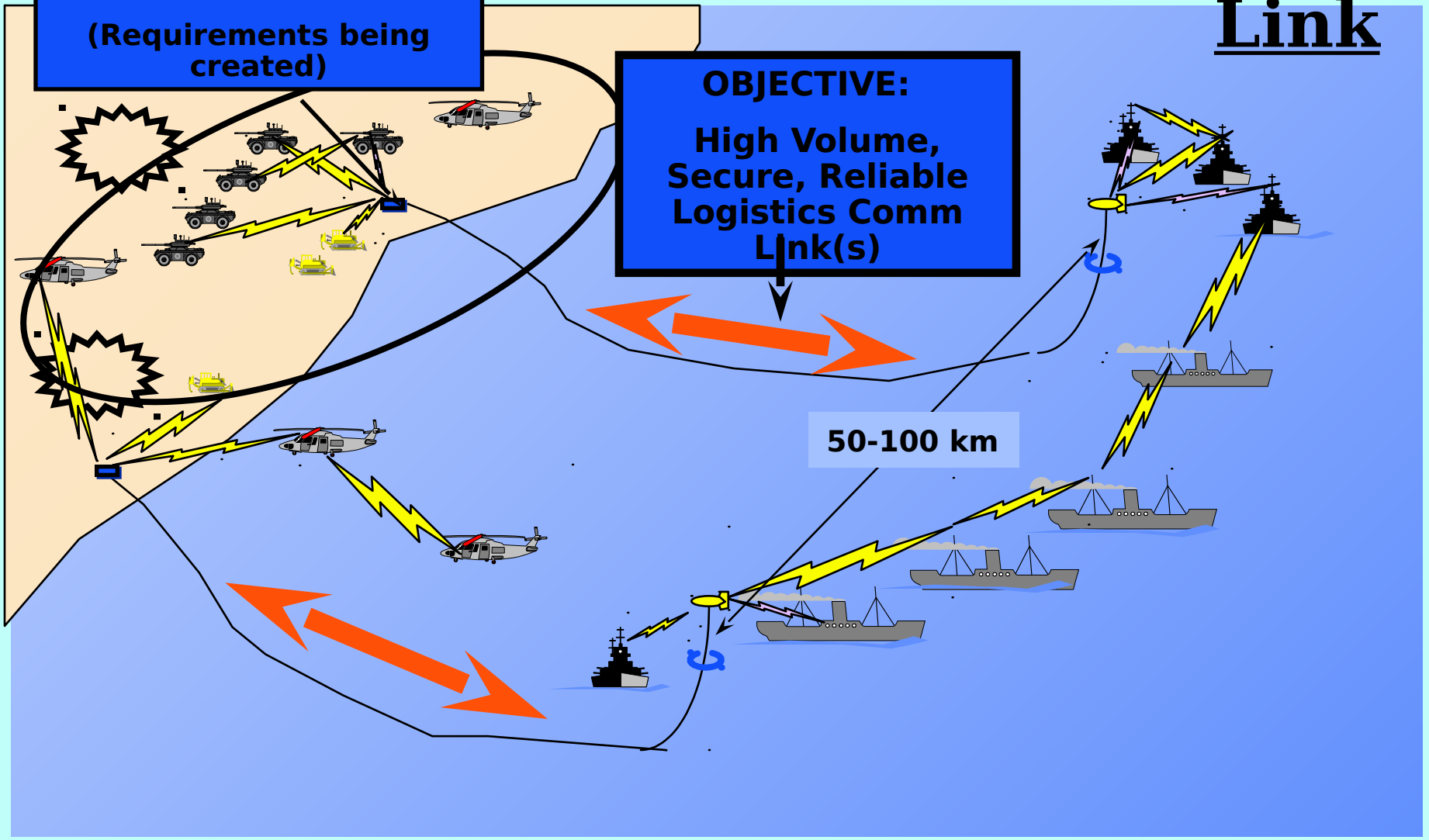
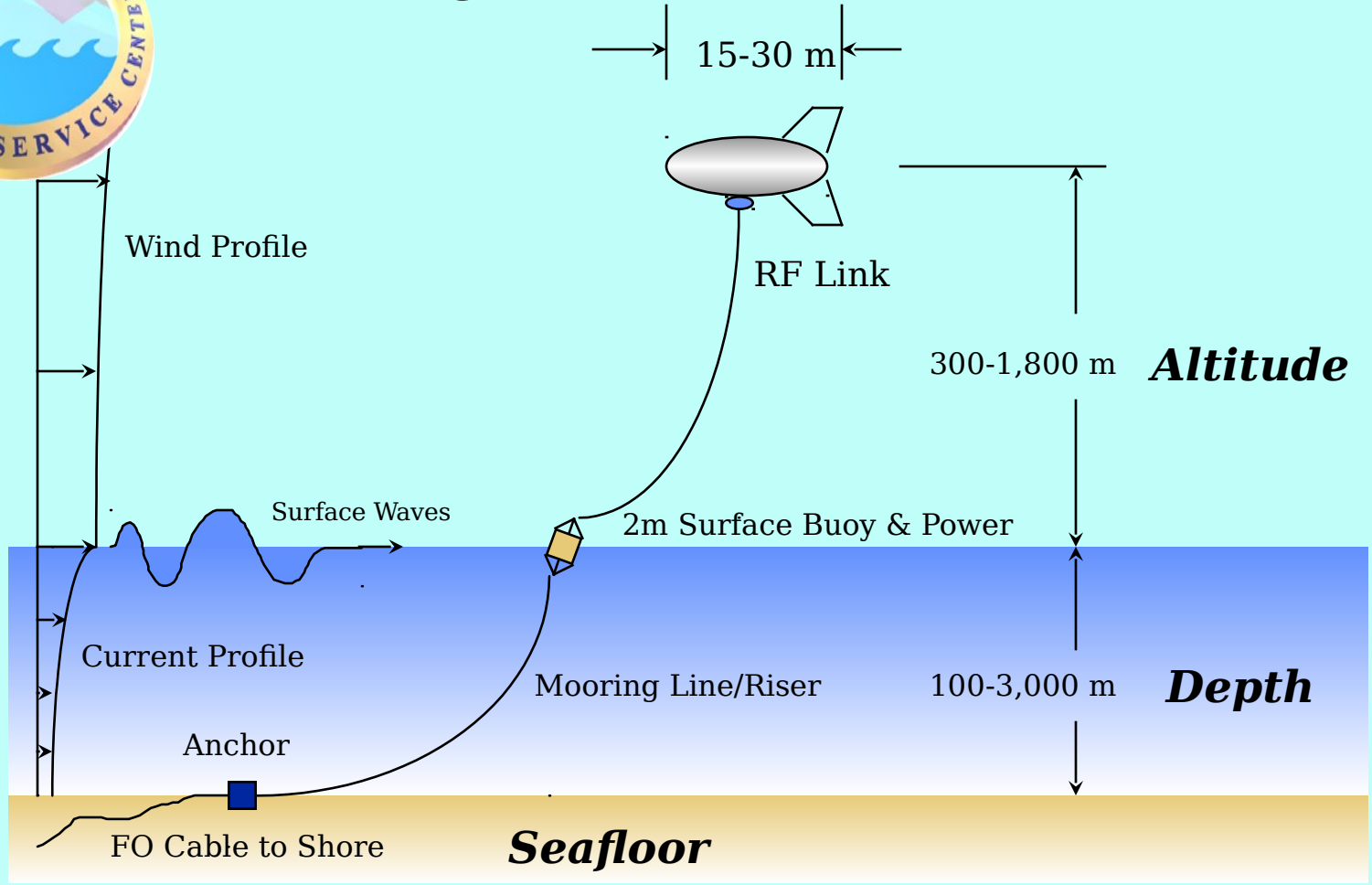
SeaBase Logistics Comm Link

Battlefield Logistics Data (NTAV)

(Requirements being created)



Design Considerations for a Moored AeroBuo



UCT Contingency Support Systems

- Site survey support for Elevated Causeway, Offshore Petroleum Discharge System, RO/RO
  - Bathymetry to 200 ft depth
  - Soil classification to 50+ ft
  - Pile penetration/capacity prediction
  - Near shore current measurement and telemetry system
- Bathymetric Survey Systems upgraded
  - Ruggedized, improved reliability
- Meets 24-hour UCT mission requirement

- UCT survey system operations using contingency support equipment
  - –Operation “Foal Eagle”, Offshore Petroleum Discharge System, Korea.
  - –Certification of safe harbor for emergency access by fleet submarine and tanker after major hurricane, Puerto Rico.
  - –Operation “Dynamic Mix”, certify safe ship clearance for RO/RO amphibious operations, Turkey.

Mobile Offshore Base (MOB)

- **Logistics & Operation Base**
  - **Floating runway up to 6000 ft. long**
  - **Modular construction to ABS standards**
  - **Extended presence in open ocean**

- **$37M ONR S&T Program to determine technical feasibility & cost of a MOB**

- **NFESC providing technical & management support to ONR**
  - **Guiding 65 ongoing ONR contracts**
  - **Minimize risks by developing & validating industry design capability**
  - **Provide decision aids to allow DoD evaluation of proposed concepts**

- **Interim technology advances realized**
  - **Draft MOB Classification Guide**
  - **Improved design tools for motions/loads**
  - **Advances in station keeping and intermodule connectors**

NAVAL FACILITIES ENGINEERING SERVICE CENTER